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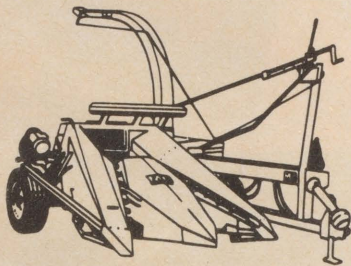
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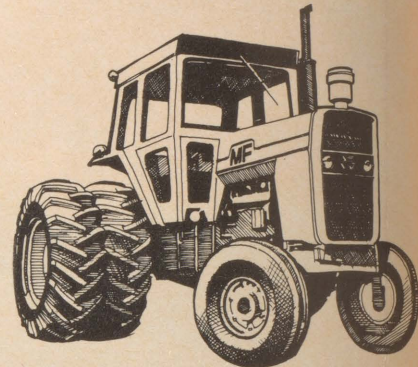
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THE macdonald JOURNAL

AUGUST 1978

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Journal Jottings

I won't argue with the experts nor
can I ignore popular taste, but I per-
sonally do not concur with the opi-
nion that the strawberry is the No. 1
small fruit. In my books raspberries
are No. 1. Wild or cultivated and
eaten preferably unadorned unless
served hot and bubbly in a freshly-
made flakey pie. I'll admit to making
one or two strawberry shortcakes a
year, but it is basically to please
others and because the time for
raspberries is not yet ripe. Raspber-
ries are on my own menu for
tonight's dinner, and they are also
on the reading menu in this month's
issue. The author, Dr. Taper, tells us
that they should be planted in
September — naturally I hope there
will be a rush to include this fruit in

gardens everywhere. And just so
that you do not feel that personal
prejudices influence your reading
matter, there is another article by
Professor Taper on my desk which
will appear very shortly. The sub-
ject? Strawberries.

Following the interest shown in our
general article last year on sheep,
we are pleased to point out that we
have a more specific one this month
by Henry Garino of the Department
of Animal Science entitled "Feeding
Ewes for Better Breeding Per-
formance." Still on the subject of
sheep, you will find a short piece on
"Health Improvement of Sheep" in
the Family Farm section.

Hazel M. Clarke

The Extension Department recently presented its annual report to McGill University. The exercise of enumerating the events and highlights of the past year prompts an analysis of Extension Department programs. A major aspect that stands out significantly is the increase in the number of people that have a regular contact with the programs and services offered by the Department. Consequently, the awareness of the multitude of activities and services available at Macdonald College is becoming more extensive. The effort to inform the general public on the agricultural research, food science, and education that is available at the College is a role that is taken seriously by the staff of the Extension Department, which promotes a continual dialogue and feedback between the public and the researchers.

The accessibility of Macdonald staff has been a tradition established for many years. The exchange of information familiarizes agricultural producers, agribusiness, and the government with many technical problems and possible solutions encountered in food production and processing.

A reality that must be coped with, however, is the limited resources available within the Extension Department. Every year the requests for services exceed the resources of the Department but, miraculously, the dedicated staff manage to accommodate the inquiries and most of the requests. Often the collaboration and the good will of other staff of the Faculty of Agriculture are relied upon to participate in various extension activities. Most departments make it a duty to respond to such requests because they realize the importance of establishing and maintaining a contact with those involved in the field of agriculture.

The dilemma of increasing costs which confronts any public institution has not escaped the Extension Department. Keeping the various Extension programs on an even budgetary keel is becoming more and more difficult. The budgetary constraints often prevent the Extension

Department from allocating the necessary resources to respond to all the requests received from the public. The Department, therefore, faces the unpleasant task of modifying and increasing the cost of some of its programs, especially those that make an excessive demand on the budget.

We want to assure the public that the Extension Department will continue its efforts to be available to organizations and to individuals for the betterment of Quebec and Canadian agriculture.

Martin van Lierop
Editor

Feeding Ewes for Better Breeding Performance

by Henry Garino
Department of Animal Science

Feed is by far the largest single factor influencing the cost of production in any sheep operation. Furthermore, since the efficiency of lamb production, which hinges on the reproductive rate of the ewe and the feed conversion of the lambs, is also affected by nutrition, one cannot over-emphasize the importance of a proper feeding program.

As we are approaching the time or the year when breeding will take place, I wish to discuss in this article some feeding and management practices related to breeding performance and successful lamb crops.

In order to plan a feeding regime for the ewe flock we have to understand their nutrient requirements which change during the year (see Figure 1) and try to meet those requirements by properly allocating our feed resources.

It is very important for the ewes to be in good body condition at breeding time. As they are approaching the end of their dry period, they should be gaining weight to recuperate the losses incurred in lambing and lactating. Good body condition at breeding time has a marked influence on the ovulation rate of the ewes and hence on the number of lambs to be born. For this reason, the practice of flushing or improving body condition just prior (two to three weeks) to breeding has received considerable attention in nutrition research. British workers have reported significant increases in the ovulation rates of thin ewes fed at a high level of feed intake as compared to ewes in similar body condition but fed at a restricted level.

However, ewes in good body condition failed to respond to the higher feed level suggesting that flushing may not be a profitable practice with such ewes, especially if supplemental feeds have to be purchased.

Flushing can be accomplished by moving sheep to better pasture or by feeding one half to one pound of grain/head/daily (Table 1) in addition to forage.

There are several factors that should be considered when thinking about flushing. It was mentioned that fat ewes do not benefit by this practice and ewes that have been

fed to lose weight during their dry period do not seem to respond as well as those who were gaining slowly during this time. Also, the largest number of ova are produced during the middle of the breeding season; therefore, flushing is not necessary at this time. Instead, it should be practiced either prior to or at the end of this period to obtain a good ovulating response. In the case of ewe lambs flushing should be done late in the fall when they will have achieved a reasonable body size and when they are bound to respond to the higher energy and protein in the ration. A word of caution on legume pastures which just prior to frost may have a high estrogen content. This can cause

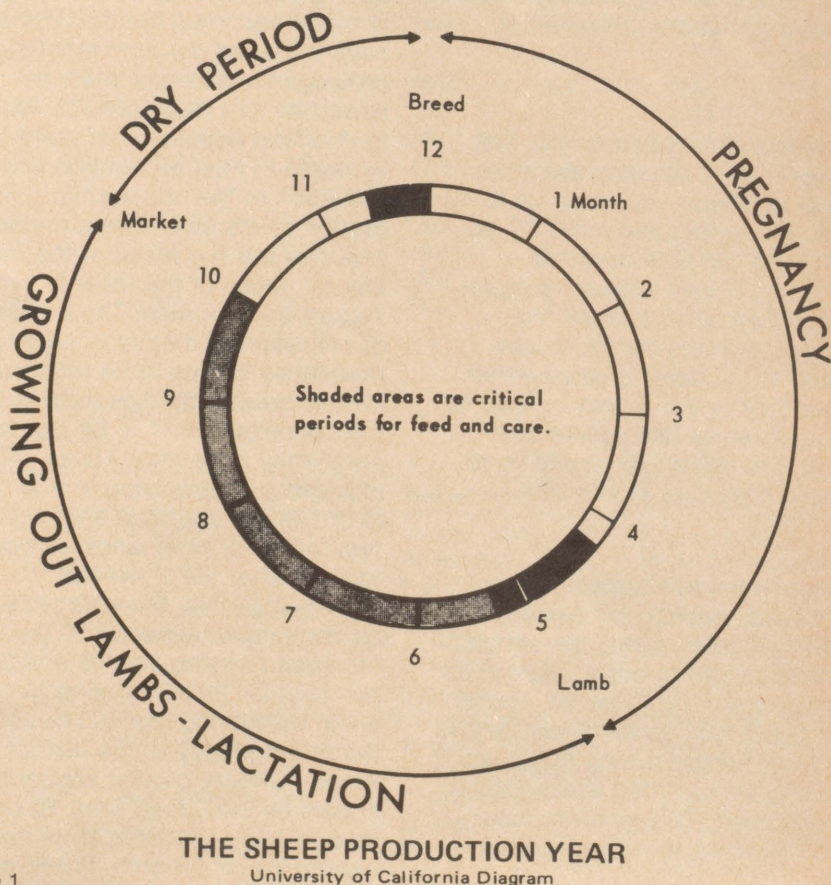


Figure 1.

Table 1. Recommended Flushing Rations for Ewes

ONTARIO¹		QUEBEC²	
#1	Good pasture (aftermath, rape, etc.)	#1	4-6 lbs. legume hay + 3/4-1 lb. Oat:Barley (50:50)
#2	On pasture or 4 lb. hay + 1 lb. grain	#2	4-6 lbs. grass hay + 3/4-1 lb. Oat (40%) Corn (30%) Wheat (10%) Wheat bran (10%) Soybean meal (10%)
#3	4 lb. corn silage + 1 lb. good hay + 1 lb. grain	#3	4-6 lbs. fair hay + 1 lb. Oat (60%) Wheat bran (30%) Soybean meal (10%)

¹O.M.A.F. AGDEX 430/50, 1973

²M.A.Q. AGDEX 430/50, 1975

delayed conception. Another factor affecting the success of flushing is the health of the ewes. A proper deworming program and attention to other problems, such as footrot, prior to the breeding season should pay handsomely in the end. Parasites are known to depress appetite, reduce the digestibility of the feed, and affect the utilization of minerals.

The effects of nutrition on the first few weeks of pregnancy are more difficult to assess. Although up to 40 per cent of embryonic mortality occurs during the first month of pregnancy, British workers suggest that nutrition plays a small role. However, it would not be recommended to suddenly change either the quantity or the quality of feed for at least three to four weeks post-mating. The objective should be to maintain condition at this time.

In most sheep operations no extra attention is required concerning the feeding program during the second and third month of gestation, except for ewes that tend to be fat. Those ewes could lose up to 10 per cent of their body weight during this time providing they are fed adequately in late gestation. This tends to lower the occurrence of pregnancy toxemia.

The reason why nutrient requirements for mid-gestation are only slightly higher than maintenance is because the development of the fetus is very slow, thus requiring a minimum of additional nutrients. However, after the end of the third month there is a rapid increase in fetal growth and consequently good nutrition becomes critical. The ewes have to be fed the nutrients (energy, protein, minerals and vitamins) required for this rapid growth. Parallel to this fetal development there is an increase in heat production and a reduction in the urinary nitrogen excretion of the ewe. These metabolic changes are the result of the high energy needs of the fetus to synthesize body protein. The efficiency of utilization of dietary energy for pregnancy seems to be relatively low, whereas with digestible protein the opposite seems to be true as pregnancy advances. These changes are very important in trying to define the optimum energy:protein ration for pregnancy. According to Dr. Tait at the University of British Columbia, the energy requirements increase by 30 per cent for ewes carrying singles and by 50 per cent for those carrying twins when comparing the first three months of pregnancy to the last six weeks. Dietary protein concentration should be increased from 10 per cent in early gestation to 14 per cent in the last month. These protein

values are slightly higher than those outlined by NRC (Table 2) and more in line with the findings at the Rowett Research Institute in Scotland (12 to 16 per cent).

In trying to evaluate the response of the ewes to the changes in the feeding program with advancing pregnancy, one should assume that if the ewes have been maintaining their weight since mating, the gain required over the last few weeks may be from 15-20 pounds (singles) to 25-30 pounds (twins). Too much gain is undesirable since it usually leads to lambing difficulties due to very large lambs or fat ewes which are prone to have delivery problems. These problems are more frequent with ewes carrying singles or with ewe lambs. A small gain, on the contrary, may result in weak lambs, particularly in the case of prolific ewes. More important, body condition at parturition significantly affects milk production onset and capacity, and lamb birth weights will affect the ability of lambs to challenge the ewe to her maximum production.

As we are preparing ewes for lactation it should be remembered that insufficient nutrient intake in late gestation will reduce milk yields even at levels where the birth weight of the lambs may not be affected. At this time, the size of the enlarged uterus may restrict the digestive capacity of the ewes; therefore, low quality bulky feeds should be avoided. The question whether corn silage should be fed is often asked. Research at Ohio clearly indicates that corn silage (33-36 per cent DM) when properly supplemented (urea, limestone, dicalcium phosphate and sulphur) and fed alone to gestating and lactating ewes is as good a feed as a conventional ration of hay and concentrate.

Ewes should have access to minerals free choice and cobalt-iodized salt at 0.5 per cent of the dry matter of the complete feed. Calcium and phosphorus should be

fed to meet requirements and supplemented if the forage (high in calcium) and grain (high in phosphorus) offered are deficient. Vitamins A, D, and E may be added to the ewe's ration through a vitamin premix.

The following rations are recommended in Ontario and are designed to cover three basic feeding programs (pasture, hay, and corn silage) from breeding to lambing (Table 3).

Their timely use in combination with minerals and vitamins after a good parasite control program and tender loving care is all your ewes need to reward you with a larger, healthier lamb crop next spring.

TABLE 2. Daily Nutrients Requirements of Sheep (based on air-dry feed containing 90% dry matter) NRC

Body wt (lb)	Gain or loss	Feed per Animal (lb)	TDN	Crude Protein	Ca (gm)	P (gm)	Salt (gm)	Carotene (mg)	Vit A (IU)	Vit C (IU)
EWES: Nonlactating and first 15 weeks of gestation										
99	+	2.64	1.29	.21	3.2	2.5	9.0	1.7	935	250
119	+	3.08	1.40	.24	3.3	2.6	10.0	2.0	1100	300
140	+	3.3	1.70	.27	3.4	2.7	11.0	2.4	1320	350
180	+	3.7	1.90	.30	3.5	2.8	12.0	2.7	1485	400
Last 6 weeks of gestation										
99	.37	3.7	2.0	.32	4.2	3.1	10.0	5.8	2320	250
119	.37	4.2	2.2	.34	4.4	3.3	11.0	6.8	2720	300
140	.37	4.6	2.4	.36	4.6	3.5	12.0	7.9	3160	350
180	.37	4.8	2.5	.37	4.8	3.7	13.0	9.1	3640	400
First 8 to 10 weeks of lactation										
99	—	4.6	2.7	.40(.60)	6.2	4.6	11.0	5.8	2320	250
119	—	5.1	2.9	.42(.63)	6.5	4.8	12.0	6.8	2720	300
140	—	5.5	3.1	.44(.66)	6.8	5.0	13.0	7.9	3160	350
180	—	5.7	3.1	.46(.72)	7.1	5.2	14.0	9.1	3640	400
Last 12 to 14 weeks of lactation										
99	+	3.7	2.0	.32	4.6	3.4	10.0	5.8	2320	250
119	+	4.2	2.2	.34	4.8	3.6	11.0	6.8	2720	300
140	+	4.6	2.4	.36	5.0	3.8	12.0	7.9	3160	350
180	+	4.8	2.5	.37	5.2	4.0	13.0	9.1	3640	400
Replacement lambs and yearlings										
59	.30	2.6	1.5	.30	2.9	2.6	8.0	1.7	765	150
79	.20	3.1	1.6	.27	3.0	2.7	9.0	2.3	1065	200
99	.14	3.3	1.7	.25	3.1	2.8	10.0	2.8	1260	250
119	.07	3.3	1.7	.24	3.2	2.9	11.0	3.4	1530	300

TABLE 3. FEEDING PROGRAM FOR 140-POUND EWE

	Ration No. 1	Ration No. 2	Ration No. 3	Ration No. 4
Early Gestation¹ TDN 1.70 lb Protein .27 lb	Avg pasture	4 lb hay	3 lb corn silage 1 lb avg hay 1/4 lb 24% protein sup	7 lb corn silage 1/2 lb 24% protein sup
Late Gestation¹ TDN 2.4 lb Protein .36 lb	4 lb good (mixed) hay 1 lb grain	3 lb poor-avg hay 1-1/2 lb grain	6 lb corn silage 1 lb good hay 1/2 lb 24% protein sup 1/2 lb grain	6 lb corn silage 3/4 lb protein sup 1 lb grain
Early Lactation² TDN 3.1 lb Protein .66 lbs	5 lb good (2nd-cut alfalfa) hay 1 lb grain (corn or barley)	5 lb avg (mixed) hay 1-1/2 lb grain	10 lb corn silage 1 lb good alfalfa hay 1-1/2 lb 24% protein sup	12-1/2 lb corn silage 2 lb 24% protein sup
Maintenance¹ TDN 1.70 lb Protein .27 lb	Poor-avg pasture	4 lb poor-avg hay	3 lb corn silage 1 lb poor hay 1/4 lb 24% protein sup	7 lb corn silage 1/2 lb 24% protein sup

1-From Nutrient Requirements for Sheep, NRC

2-Protein requirements 50% greater than NRC standards.

HOME GARDEN RASPBERRIES

by Professor C. D. Taper
Department of Plant Science

Over the past decade the commercial production of red raspberry in Quebec has declined from 700 to 300 tonnes. A somewhat dubious interpretation has attributed this reduction to a lack of high quality, cold resistant cultivars, and unsatisfactory cultural practices. The fact that about 15 years ago the industry appeared to be on the upswing, with many growers with large, well cared for plantations suggests a more fundamental cause. It is well known that the advent of virus indexing of strawberry varieties restored high yield capability to strawberry, a crop once so drastically in decline due to low yields that raspberry was well on the way to substitution. Is it not probable that this trend is now reversed with strawberry pushing out the raspberry? An explanation lies in the undeniable fact that most consumers when given a choice, prefer strawberry; although raspberry remains away in front when it comes to selecting the second most favoured dessert type small fruit.

The drastic decline in interest in the raspberry on the part of the commercial grower is underlined when it is considered its consumption is exceeded tenfold by that of the strawberry. Despite this there should be a place in the home garden for a row of red raspberries. They are popular with most members of every family as dessert, or jam, or in pies, and they are easily grown. Ready shortly after the strawberry season, red raspberries begin to ripen July 10 to 20 and continue for three or four weeks. A plantation may remain in place during 15 years. Fifty plants in a garden will produce berries to fill 100 pint baskets, sufficient for a family of five.

In making a selection of cultivars to plant, it is not necessary to depart from the older and proven varieties. Newburg and Willamette are favoured July berries. The fruits of

the latter are huge in size, a few berries filling a pint-sized container. Latham is a dark, sweet berry falling in size somewhere between the two latter. Latham ripens in early August to extend the harvest season. The yield of each of these three varieties is about 8,000 pint baskets per acre. Note that red raspberry yields are normally half of those of strawberry, which ordinarily per acre is about 8,000 quart baskets in volume. Two other varieties give two crops in one year, a small crop in July and a heavier one in September, a novelty reflected in their cultivar names, Indian Summer and September. These are not found in commerce. Neither is Amber, an exceptionally high quality yellow berry supplying a luxury crop for the gardener, but not easily stored or shipped.

It is worth noting that the storage life of all raspberry varieties is of brief duration, being no more than three days at 0 to 5°C, with the relative humidity between 85 to 90 per cent following precooling, to 5°C immediately after picking in the cool of the morning. Without cold storage the berries will not remain firm and plump for more than 24 hours. For the home gardener a standard household refrigerator with a crisper may provide the required conditions for a small pick made at intervals as the berries ripen, normally every other day. The excess of crop may be jammed or bottled, or preserved by freezing for use later in the year.

Strange as it may seem, the raspberry was designed by nature to be an undercover plant growing in light shade under sparse trees. This does not mean that it likes deep shade, because it struggles for sunlight and dies for lack of it just as any other undercover species, but it is not completely adapted to full sun. Its lack of complete adaptation to full sunlight makes it unusually susceptible to spider mite injury, as are most shade tolerant plants. Further, since the environment in which it evolved was lightly shaded and had a relatively low rate of

water loss from a cool soil, the red raspberry dislikes hot, dry soil. Its need is for a moist, fairly cool root-run. Adjacent to tree cover, its ancestors had this requirement met by a canopy of overhead leaves, and a mulch of previous years' leaf litter. In the garden we may try to provide this need by an under-mulch system of culture, or by any system which serves to increase the organic matter content of the soil. Incidentally, it must not be inferred that a location in the rows between orchard trees is satisfactory. It is not possible to control the suckering habit of the raspberry with the roots of fruit trees all about, because the large roots and trunks of the trees must not be damaged by scraping.

Any good garden soil will produce raspberries, but the best is a deep, well drained, slightly acid sandy loam at pH 6.0. Water must not stand long on the surface in spring because a high water table with its excess water tends to kill the feeder roots. In order that the land be weed free, raspberries should follow a crop which has been well cultivated but never after potatoes, tomatoes, or peppers, which are likely to leave a wilt inducing organism in soils. Raspberry plants infected by this disease do not recover.

Moisture is often low in midsummer, the ripening and harvest time of raspberries. Therefore, to ensure water retention, organic matter should be worked into the soil prior to planting. Perhaps the best way is to apply well decomposed barnyard manure at a rate of 50 tonnes per hectare (22 tons per acre). Alternatively, one may use one-quarter this amount of a clean straw with 45 kilograms (100 pounds) ammonium nitrate or equivalent in nitrogen to feed the bacteria which decompose the plant material. In addition it is advisable to drill in superphosphate at 2.5 t per ha and, if the soil is very acid, one may lime it sufficiently to bring the pH to 6.0. For a small garden the fertilizer amount must be appropriately adjusted and the

superphosphate may ordinarily be omitted. Lime may be ignored unless the soil is extraordinarily acid.

Red raspberries increase by suckers from the perennial roots. In Quebec it is recommended that first year sucker plants be planted in September. Certified nursery stock visually free of disease should be purchased. The plants may be separated by 0.9 metre (three feet) within a row and, after planting, headed back to two or three buds, i.e., to a height of approximately 20 cm (eight inches). If more than a single row is required, space the rows 1.8 to 2.4 m (six to eight feet) apart. The rows will fill in by suckering and may be maintained as hedgerows 0.6 m (two feet) in width. Trellising is not necessary with the varieties recommended in the preceding if good feeding is provided to ensure that the canes grow thick and upright. However, a fastidious home gardener may see some virtue in trellising a long-term, small-scale plantation, and be prepared to disregard the cost and labour involved. The method is fairly simple. Set stout cedar posts chemically treated to resist fungi at 6 m (20 feet) intervals in the line of planting — not in the aisles. To these attach 0.45 m (18 inch) or slightly wider cross arms at a height of 0.76 m (30 inches) above the ground. Cross arms should have holes bored near each end through which 12-gauge galvanized wire may be strung to support sagging canes. As a result, the ripened fruit may be more readily located and picked.

An established plantation after the first year should be fertilized according to the following:

- a) an annual fall application of rotted manure 5 to 10 cm (two to four inches) in depth amongst the plants and along each side of the row over the root area, i.e., strips about 0.9 m (three feet) in width; and
- b) an annual spring application of 7 to 11 kg (about 15 to 25 pounds) of 5-10-10 per 45 m (150 feet) of row in either the same manner or, if it seems effective, solely within the 0.9 m side strips.

Hoeing or cultivation to a depth of 5 cm (two inches) in the aisles between rows will keep down weeds and unwanted sucker growth coming up outside the hedgerow.

Deeper cultivation may damage the feeder roots. Unless the ground is very weedy two or three hand-hoeings, spring to mid-summer, may in some cases prove sufficient to keep the aisles clean. A mulch of deciduous leaves 10 to 15 cm (four to six inches) thick and containing about 25 kg per t or 25 pounds per T to replace nitrogen used by the organisms breaking down the mulch, may be placed in the hedgerow amongst the canes in autumn. This may replace at least some manure, and the decomposed organic matter promotes a vigorous and thick root growth due to aeration and moisture retention. The results are larger fruits and a heavier yield.

Unlike the roots which are perennial, raspberry canes are biennial. Fruit is borne on canes of the previous year's growth. A fruited cane begins to break down at its base after harvest. One-or-two-year canes are more distinguishable in early autumn. At that time the dead or dying fruited canes should be removed and the remaining current canes thinned to leave the thicker and more vigorous ones. These should be spaced at about 15 cm (six inches). This operation may be performed with a pair of hand secateurs or a short, sharp sickle on a long hoe handle. A good rule is to leave 10 good canes in each 0.6 m (two feet) of row. Topping should not be done. It reduces vigour and yield. The best yields are on east to west rows.

Three major plant troubles affect raspberry plants and reduce yields. A plantation made with certified stock reduces the likelihood of virus affected plants appearing later. These have low yields and are recognizable by small size, and yellow, crinkled leaves. An affected plant should be removed and burned. If many appear in one year, a heavier application of nitrogen may temporarily mask the effects and induce a satisfactory yield.

The raspberry cane borer is a small beetle which girdles the tips of the canes in order to deposit an egg which later becomes a large grub. This creature bores down the cane to make an enlarged home for itself somewhere above the ground. Girdled canes wilt and bend over in the shape of a shepherd's crook. The best control lies in cutting off the affected tips some 10 cm (four inches) below the curvature and burning. If this is done every three to four days for about three weeks in spring, the population will eventually decrease to the vanishing point.

It has already been explained why the raspberry is prone to attack by red mites. Hosing beneath the leaves with water is a satisfactory control for a limited number of plants. Here is another, little known tip. If fruiting canes are tied in clumps for mutual support and to throw the berries outward for easy picking, it will be noticed that the small amount of shade one cane gives another will be enough to discourage the spider mites. This is a type of shade made with binder twine at little expense and effort. As mentioned in the preceding, the raspberry is a plant incompletely tolerant to full sunlight and one which derives certain benefits from a minor degree of shading.

In areas where even the hardiest varieties find it difficult to survive the winter, the canes can be overwintered by bending them down and holding them to the ground by covering the tips with soil. Then one awaits the first snowfall. Its insulating qualities help to retain the heat of respiration and keep the plants alive.

In brief, the way to produce a bountiful raspberry harvest, and to do less work in relation to yield, is to provide plentiful organic matter, a cool, well aerated but moisture retentive soil, and the right fertilizer in sufficient quantity to ensure thrifty growth. This is most effective when combined with a minute amount of partial and localized shade to keep the spider mite from taking an undue toll.

The preceding is all one needs to know in order to get started. So, good luck, and good eating.

Macdonald Reports

CONVOCATION, JUNE 3, 1978

Emeritus Curator

Introduction of
Doctor Dorothy E. Newton Swales
for Emeritus Curator
McGill University Herbarium

Mr. Chancellor,

Dorothy E. Newton Swales — a native Quebecois — received her B.S.A. degree with specialization in Plant Pathology from McGill University in 1921. Dorothy Swales went on to gain an M.Sc. in Bacteriology from McGill in 1923, spent the year 1929-30 at the University of Berlin and University of Munich, studying Forest Botany, and in 1931 convoked with the Ph.D. in Mycology from the University of Manitoba.

Dorothy Swales has served the Faculty of Agriculture in various capacities over the past many years. From 1930 to 1935 she was lecturer in Mycology and Systematic Botany. Then followed a period as wife and mother, with a return to academics in 1945 as a lecturer in Botany to the large post-war classes. In 1955 she became Honorary Botanist for the Morgan Arboretum, and from 1964 to her formal retirement in 1971 she was Curator of the Herbarium. Informally, she has continued her association with the Herbarium and, in particular, has been mentor and friend of students and staff alike.

Dr. Swales's major research interest has been in arctic and sub-arctic flora. Early acquisitions to the Herbarium were made through the efforts of students and missionaries. Each summer from 1963 to 1977 she has made detailed collections of flora from such places as Frobisher Bay, Churchill, Tuktoyaktuk, Whitehorse, Cornwallis Island and



Dr. Dorothy E. Swales, left, at work in the Herbarium.

Peterborough. A result of her efforts has been to place the McGill Herbarium in the forefront of repositories of arctic flora. Her most recent opus on "nectaries of some 17 arctic families" will be published in the prestigious journal, *Rhodora*.

Dr. Swales is a botanist by vocation and a naturalist by avocation. She is an ardent "birdwatcher" and has contributed many request articles on migration of birds and local flora to the *Montreal Star* and is a much sought-after speaker at district garden and naturalist clubs.

Mr. Chancellor, it gives me great pleasure to present to you and to this convocation, our colleague, Dorothy E. Swales, and ask you to

confer upon her the title, Emeritus Curator, McGill University Herbarium.

Howard A. Steppeler,
Department of Plant Science.

Honorary Degree

Mr. Chancellor, I am privileged to introduce to you, and to this Convocation, a remarkably versatile scientist in the person of Douglas Barton Osborne Savile.

Although he was born in Dublin, Ireland, and has spent most of his

working life in Ottawa, Douglas Savile in no stranger here, and needs no introduction to many of us. This is because he, together with a group of young immigrants from Britain, came to Canada to attend MacDonald College in 1928. His earliest studies here were in Horticulture for which he was awarded a Diploma in 1930. He then switched to the degree course in Plant Pathology and was graduated with the B.S.A. degree of McGill University in 1933. Apparently this whetted his appetite for Plant Pathology because he stayed here for an additional year of research into certain histological changes in host plants induced by pathogenic organisms, and completed the requirements for the Masters degree in Plant Pathology in 1934.

Douglas Savile's ability was immediately recognized and he was promptly employed as a plant pathologist at the Central Experimental Farm. However, the lure of further education soon prompted him to leave that position to study for the Ph.D. degree in plant pathology, which he obtained from the University of Michigan in 1939.

Having completed his graduate studies, Dr. Savile returned to Ottawa, but his career as an agricultural scientist was soon interrupted by a period of service as an officer in the R.C.A.F. Eventually he returned to the Canada Department of Agriculture where he has had a long and distinguished career as a plant pathologist-mycologist. Although officially retired in 1974, with the rank of principal research scientist, Dr. Savile has never ceased his research activities. He now holds the honorary rank of emeritus research associate in the Biosystematics Research Institute, where he was a long-time Curator of the National Mycological Museum.

Douglas Savile's published works — which include more than 100 research papers and at least 75 semi-popular articles — reflect his interests in such diverse fields as the aerodynamics of bird flight; meteorology; microscopic techniques; the cytology and taxonomy of

fungi; the taxonomy and biogeography of phanerogams; floristics, especially of the Canadian Arctic; and the principles and processes of evolution.

This inquiring naturalist is internationally known for his outstanding research on the taxonomy of the rust fungi and on the co-evolution of these fungi with their host plants. As a result of his field observations in many different climatic regions he has devised a unique proposal regarding the interactions between the weather, birds, insects, and plants and how these interactions have had their influence upon

dispersal, hybridization and evolution in the fungi.

Mr. Chancellor, may I present to you, so that you may confer upon him the Degree of Doctor of Science, *honoris causa*, this winner of the George Lawson Medal of the Canadian Botanical Association, Fellow of the Arctic Institute of North America, Fellow of the Royal Society of Canada, distinguished naturalist and honoured graduate of McGill University, Dr. Douglas Savile.

L. E. Lloyd, Dean,
Faculty of Agriculture.

THE DANGERS OF OVER-SPECIALIZATION IN BIOLOGY

Convocation address by Dr. D. B. O. Savile

In recent years the rapid growth in both the literature and the complexity of biology has presented various problems. We cannot keep up with the current literature of a greatly expanded field; nor can we individually master all the techniques used in such a field. We hear that specialization is the answer — specialization and the team approach. Although this combination may yield good results, it is often far from perfect. Complete specialization is not as necessary as has been claimed. Some years ago a correspondent in *Science* blandly stated that it had been impossible for anyone in the last century to encompass more than one discipline. Perhaps he was trying to excuse his own mental myopia. If the poor fellow had ever peered over the edge of his rut, I wonder what he would have made of that great classicist, mathematician and zoologist D'Arcy Wentworth Thompson.

Certainly some specialization is almost inevitable in what may be regarded as one's primary discipline; but that is no reason for us to ignore the rest of the living

world. In North America there has been too much of this sort of over-specialization. We see ecologists who fail to distinguish between similar-looking plants and seem undismayed at the consequences of their ignorance; systematists ignorant of all but one or two families of organisms and others who erect phylogenetic schemes of organisms with no useful fossil record, without troubling to learn, from animals with good fossil record, how evolution actually operates. In much of Europe, notably the Fennoscandian countries and Czechoslovakia, many of the leading biologists are competent all-round naturalists; and beyond question their detailed research benefits from their breadth of view.

The specialist has been unkindly defined as someone who learns more and more about less and less, until he finally knows all about nothing. Let us at least avoid this horrid extreme. The team approach, hailed as the answer to our biological problems, although often necessary, is really only a partial answer. At its worst the team approach is like the fable of the blind men trying to describe an elephant, and likening it to a wall, a tree, a snake, a spear, a fan, and a rope.

(The rope, in case you forget the story, was at the opposite end from the snake.) In the study of any complex biological system, someone must be adventurous enough to move all round the elephant; and nearly all biological systems **are** complex — far more so than many physical or chemical systems.

Of course a team is needed when several complex techniques must be used in the study of a problem; but, unless some team members can look at it from other viewpoints that their own, progress may be slow and uncertain. More than 30 years ago Marston Bates wrote an account of jungle yellow fever in South America, in which he showed that the spectacular success of the project was largely due to everyone in the group working in at least one discipline in addition to his own. Thus they were quickly able to see the complete picture of the parasite, its vectors, and the forest workers. Less dramatically a few years later, working on the ecology of the biting flies in northern Canada, we reached the same conclusion: it paid us to mind each other's business.

Let me give an example of a simple little project in which a joint study was necessary. But it should be realized that it came to fruition only through the foundation being laid by several naturalists with wide interests. The elucidation of the splash-cup mechanism that actuates the dispersal of the little peridioles from the fruit-bodies of the bird's nest fungi took many years. After Brodie published his classical account of the mechanism, he and others soon added other examples of the device in fungi, bryophytes and flowering plants; and elucidation of what came to be called the springboard mechanism soon followed.

I was impressed by the apparently superior momentum of large drops falling from trees over the generally much smaller drops of natural rain falling much further. This is an effect that you cannot fail to notice if you carry an umbrella in light rain. You do not hear the small drops hitting it, but as you pass under a tree

the large drops hit like pistol shots. Being absorbed with other things I set the problem aside but was reminded of it with the appearance of Brodie's book on the bird's nest fungi. I found some data on terminal velocities and drag coefficients in the meteorological literature; but meteorologists are interested in the rain that falls from heaven, and I was concerned with the acceleration of the drop in the first few meters. Unfortunately the calculus through which I had been patiently guided 45 years before had vanished; but I got enthusiastic co-operation from Dr. Hayhoe, a mathematician with our agrometeorology group, who derived an appropriate equation, allowing us to calculate the velocity of a drop of a given size at stated distances from the release point. The results were startling. Even after half a metre a 4 millimetre drop has nearly twice the momentum of a 2.5 millimetre drop (bigger than is usually found in rain) at its terminal velocity. The results throw light on the dispersal of pathogens in trees and shrubs, and on the ecology of various plants with splash-cup or springboard dispersal. They also explain why Dr. Brodie found a bird's nest fungus under shrubs on dry coastal slopes in Peru where dew is the only recorded precipitation. Drips from the dew-laden foliage must splash the peridioles onto leaves and twigs. The peridioles are doubtless carried with leaves and twigs from shrub to shrub by desert mice, which eat them and excrete the germinable spores outside the burrows.

An open-minded approach by a non-specialist will sometimes give an empirical answer to problems too complex to treat readily by orthodox means. In the high arctic deserts, plants may cover less than one per cent of the surface and often occur randomly. The individual plants are usually minute, often a rosette of leaves less than three centimetres across. Consequently accurate measurements of metabolism are difficult. Even if it were feasible to carry equipment and a power supply about in such terrain, an enormous

amount of sampling would be needed to secure a reasonably accurate measure of biomass productivity. However, in the course of his other studies, the field biologist can easily run a breeding bird census in his study area. He can locate nearly every nest except those of snow buntings and hoary redpolls, which nest mainly in boulder talus; and for them he can count singing males per unit length of talus. As the birds depend ultimately on plant productivity, the densities allow a meaningful comparison with low-arctic closed tundra.

H. J. Massingham, an astute observer of English rural life, once noted that cows, in a pasture with the best of forage plants, would periodically snatch a few assorted wild plants from the hedgerows. He suggested that the stimulus of added variety aided complete digestion. In war-time Britain, nutritionists who had worked out a carefully balanced, if austere, diet for the beleaguered population, were upset by a sudden demand for essentially nutritionless pickles. I suspect that the people, like the cows, displayed a sound instinct.

No living organisms exist in isolation. All are involved not merely with the physical environment but with an assortment of other organisms. We have long known that soil bacteria are important for making nitrogen available to plants, and that some plants have their own nodule bacteria; but in very acid soils the bacteria do not work and fungi must replace them. In the moister arctic deserts blue-green algae also probably supply some nitrogen. In recent years it has been found that mycorrhizal associations, long held to be a necessary evil for orchids and heath plants, are needed for optimal growth in all but a few strongly weedy plant families. In fact there is increasingly strong evidence that all higher plants owe their origin to a symbiosis between fungi and green algae, which jointly overcame the most difficult transition in organic evolution — that from water to land.

The relationship of parasitic fungi, such as the rusts, with their host plants is very complex. Despite the fine work done by geneticists, pathologists, physiologists and biochemists, the actual basis of resistance and susceptibility, even in stem rust, is still not adequately understood. However, the broad outlines of the process of co-evolution of rusts and their hosts have become reasonably clear in recent years, but only through a consideration of all aspects of both sets of organisms, and in natural populations not seriously disturbed by man. Such studies have shown that a rust in its evolutionary youth (when it has great genetic diversity) may jump successfully to a closely associated but distantly related plant that is also young and genetically diverse, and so give rise to a new rust species. Only a good understanding of the geography, ecology and systematics of the organisms involved could allow the interpretation of this complex relationship. Once it was understood we could see why it is that rusts and their host plants reflect each other's ages of origin.

Ecologically oriented taxonomic studies have shown that many morphological changes in rust fungi result from various environmental stimuli: seasonal aridity; spore-eating insects; host tissue structure; dispersal problems; or the perpetually saturated atmosphere of the tropical rain forest. Under such stimuli similar changes have evolved repeatedly in unrelated rusts. Using these characters without any thought to their function gave rise to very unrealistic classifications, which have had to be drastically revised.

I am now inclined to wonder whether there is any feature of the host plants and their ecology that we can safely ignore in trying to understand their rusts. There is a strange tropical rust genus *Ravenelia*, grown mainly on *Acacia* and its mimosoid allies, which has preposterously large compound teliospores, so big that they are borne on compound pedicels, and clearly ill-adapted to wind dispersal.

I could not account for them until a colleague, who works on fossil fungi and must therefore be familiar with all types of spores, mentioned that the compound pollen grains of *Acacia* were disturbingly similar to the *Ravenelia* spores in size and shape. A study of the pollen of *Acacia* and other mimosoids confirmed the similarity and showed that the pollen sheds freely onto the leaves and twigs below the inflorescences. Bees evidently learned to glean the shed pollen of early mimosoids from the foliage and also picked up rust spores, which they occasionally transported to distant trees on dry savannas. As the pollen started compounding, which served to reduce water loss in dry weather, the rust spores adaptively mimicked them, increasing the frequency of their carriage between distant trees where wind dispersal would be unreliable. Except in a few mimosoids that have reverted to rain forest, the grains are large and have thickened and pigmented walls — the same combination of characters that adapts rust spores to aridity. Thus it becomes clear that the mimosoids and their rusts evolved in seasonally arid climates.

For a final example of a dangerously narrow viewpoint let us turn to the vertebrates. In the last few years there has been a renewal of interest in *Archaeopteryx*, the first known bird, beautifully preserved (including feather impressions) in fine-grained silt-stone. In arguments about its way of life one paleontologist has recently proposed that its wings merely served like pingpong bats to beat insects into its bill as it rushed about the Jurassic landscape; and a second that they were simply a sort of shawl in which the animal wrapped itself on chilly evenings. The proponents of both these hypotheses overlooked the fact that the *Archaeopteryx* wing had the aerodynamically perfect elliptical outline of the immortal Spitfire, not to mention the house sparrow and most other passerine birds. This form allows relatively uniform pressure distribution across the wing in a wide range of attitudes,

and so gives good maneuverability. To claim that the hundreds of mutations governing graduated length, profile and curvature of feathers, needed to produce this wing form, accumulated without selection for aerodynamic function is simply ludicrous. As the aerodynamic refinement of the wing had been explained more than 10 years previously in two widely available biological journals, perpetration of these curious hypotheses was unjustified. Although incapable of appreciable powered flight, *Archaeopteryx* was certainly a competent glider.

You new graduates will be engaged in various fields of work, not necessarily always close to your formal initial training; but you will nearly all be involved to some degree with living organisms. If you work in biochemistry, remember that plants and animals are not merely crude sources of the compounds that you are studying but complex organisms attuned to a complex environment. By looking all round your subject you will get a clearer and more realistic picture. Keep asking "How?" and "Why?" Don't take anything for granted. If a mechanical structure or an alkaloid occurs in several unrelated organisms, there has to be a reason for it. Don't just shrug it off. The explanation may have important consequences. You may even find yourselves solving problems whose existence was not recognized. Above all, by keeping a broad outlook you will bring added enthusiasm to your work; and that will certainly improve its quality.

FACULTY OF AGRICULTURE

DIPLOMA IN AGRICULTURE

**Candidates presented by
Professor N. C. Lawson,
Director of the Diploma Course**

Audy, Richard, Montreal, P.Q.,
Honours; Ralston Purina Project Prize;
Bell, Michael, Ormstown, P.Q.,
Benison, Gary, Lachine, P.Q.,
First Class Honours;
Bourdon, Ron, Verdun, P.Q., Honours;
Burtch, Peter, Montreal, P.Q., Honours;
Clendenning, Carol, Hudson, P.Q.,
Honours;

Crone, Gordon D., Westmount, P.Q.,
First Class Honours; Ministry of Agriculture
for Quebec Silver Medal;
*Dinan, John, Montreal, P.Q.,
Fenchak, John, Hemmingford, P.Q.,
Grubb, Wayne, Waterloo, P.Q., Honours;
Guite, Dominic, Montreal, P.Q., Honours;
Heggison, Tom, Chateauguay, P.Q.,
Hoskin, Brian, Farnham, P.Q., Honours;
Kay, David B., Ste. Marthe, P.Q.,
First Class Honours; Ministry of Agriculture
for Quebec Gold Medal;
Maynard, Hugh, Montreal, P.Q.,
First Class Honours;
McGlashan, John, Buckingham, P.Q.,
Purcell, Brian, Pointe Claire, P.Q.,
Smith, Warren, Pointe Gatineau, P.Q.,
Honours;
Sparey, Janet E., Herdman, P.Q.
Sprague, Malcolm, Oromocto, N.B.,
Honours;
Stewart, Marc, Dollard-des-Ormeaux, P.Q.,
Honours;
Sutherland, Robert G., Huntingdon, P.Q.,
Valade, Robert, Town of Mount Royal, P.Q.,
Vander Star, Robert, Ste. Marthe, P.Q.,
First Class Honours.
* *In absentia*

DEGREE OF BACHELOR OF SCIENCE IN FOOD SCIENCE

**Candidates presented by
Professor E. S. Idziak,
Director of the School of
Food Science**

Aber, Elaine, Côte St. Luc, P.Q.,
(Dietetics), Honours;
*Adam, Constance, Montreal, P.Q.,
(Dietetics), Honours;
Adessky, Nancy, Montreal, P.Q.,
(Dietetics), Honours;
Ahmaranian, Paul, Montreal, P.Q.,
(Food Chemistry);
Burton, Victoria C., Dorval, P.Q.,
(Dietetics), Honours;
Chabot, Christiane, St. Lambert, P.Q.,
(Food Science), Honours;
Chan, Kim-Kwong, St-Laurent, P.Q.,
(Nutrition);
Coughlin, Ann, Dorval, P.Q.,
(Dietetics), Honours;
Cuffaro, Connie, Montreal, P.Q.,
(Dietetics);
Dubois, Danielle C., Victoriaville, P.Q.,
(Dietetics), Honours; University Scholar;
*Dufresne, Thérèse, Montreal, P.Q.,
(Dietetics);
Edelstein, Sondra, Montreal, P.Q.,
(Dietetics), Honours;
Elgar, John, Verdun, P.Q., (Food
Chemistry), First Class Honours;
University Scholar; Harrison Prize;
Froehlich, Debbi, Dorval, P.Q.,
(Consumer Services), First Class Honours;
University Scholar;
Fryer, Susan, Roxboro, P.Q.,
(Consumer Services), Honours;
Furmankiewicz, Frances A., Montreal, P.Q.,
(Dietetics);
*Goldman, Sheldon, Montreal, P.Q.,
(Food Science);
Hartley, Diane L., New Canaan, Connecticut
(Nutrition);
Hayek, Joelle, Beirut, Lebanon, (Food
Science), Honours;
Heydra, Jacqueline, St. Bruno, P.Q.,
(Food Science), Honours;
Hoffer, Susan, Montreal, P.Q., (Dietetics);
*Holtzman, Anne, Montreal, P.Q.,
(Dietetics);

Kubow, Stanley, St. Bruno, P.Q.,
(Nutrition), Honours;
Labossière, Corinne, Town of Mount Royal,
P.Q., (Consumer Services);
Lohe, Marie-France, Sherrington, P.Q.,
(Dietetics), First Class Honours; University
Scholar;
MacDonald, Susan C., Marion Bridge, N.S.,
(Nutrition);
McFarlane, Susan C., Dorval, P.Q.,
(Dietetics), First Class Honours; Governor
General's Medal; University Scholar;
*Nathaniel, Doreen J., Montreal, P.Q.,
(Food Chemistry),
Honours; University Scholar;
Nault, Christiane, Montreal, P.Q.,
(Dietetics);
O'Neil, William M., Ste. Anne de Bellevue,
P.Q., (Nutrition), Honours;
*Prud'homme, Anne, St. Bruno, P.Q.,
(Dietetics), Honours;
Rowland, Kimberley, Dorval, P.Q.,
(Food Science), Honours;
Saint Arnaud, Louise, Montreal, P.Q.,
(Dietetics), Honours;
Shearing, Helen, Rosemount, P.Q., (Dietetics);
Sutherland, Leslie L., Pointe-Claire, P.Q.,
(Nutrition), Honours; University Scholar;
Zavergiu, Lorraine A., Montreal, P.Q.,
(Dietetics).
*—*In absentia*

DEGREE OF BACHELOR OF SCIENCE IN AGRICULTURE

Agricultural Sciences Division

**Candidates presented by
Professor S. P. Touchburn,
Coordinator**

*Anid, Paul, Beirut, Lebanon,
(General Agriculture), Honours;
*Balzer, Dwight W., Petitcodiac, N.B.,
(General Agriculture);
Barnes, Christine E., Baie d'Urfé, P.Q.,
(Animal Science), First Class Honours;
University Scholar;
Bartlett, Linda M., St. John's, Nfld.,
(General Agriculture), Honours;
Beauchemin, Karen, Ste. Dorothée, Laval,
P.Q., (General Agriculture), Honours;
Beaudoin, Yvan, Disraeli, P.Q., (Plant
Science), First Class Honours; University
Scholar;
*Bellande, Alex, St. Lambert, P.Q.,
(Agricultural Economics), Honours;
Benoit, Gérard, St. Hyacinthe, P.Q.,
(Plant Science);
*Blais, Claude, Montreal, P.Q.,
(Plant Science), Honours;
Braam, Henry W., Salisbury, N.B.,
(Animal Science);
Caron, Robert, Boucherville, P.Q.,
(Agricultural Economics);
Casey, Julia C., Montreal, P.Q.,
(Plant Science), Honours;
Cogswell, Robert, Port Williams, N.S.,
(General Agriculture);
Cohen, Shelley, Montreal, P.Q., (Animal
Science), First Class Honours;
Corno, Gilles P., St. Hilaire, P.Q.,
(Plant Science);
Des Marchais, Sylvie, Montreal, P.Q.,
(Animal Science), Honours;
*Desjardins, Lucie, Montréal, P.Q.,
(Agricultural Economics), First Class Honours;
Desjardins, Michel, Montreal, P.Q.,
(Animal Science), Honours;
Deslauriers, Christiane, Ste. Foy, P.Q.,
(Plant Science), Honours;
Diorio, Daniel, Montreal, P.Q.,
(Animal Science), Honours;

*Dunphy, Paul, St. John's, Nfld.,
(General Agriculture), Honours;
Duplessis, Gaetan, Ste. Anne de Bellevue,
P.Q., (Soil Science), First Class Honours;
Fenwick, Judy, Westmount, P.Q., (Animal
Science), Honours;
Fillmore, Ann E., Bathurst, N.B., (General
Agriculture), Honours;
Fortier, Claire, Ottawa, Ont.,
(Agricultural Economics), First Class
Honours;
Fregeau, Marcel, Farnham, P.Q., (Soil
Science);
Gagnon, Denis M., Lachine, P.Q., (Plant
Science), First Class Honours; University
Scholar;
Gallivan, Catherine A., Lakeville, N.B.,
(General Agriculture), Honours;
Gerald, Claude, Brades, Monserrat, B.W.I.,
(Animal Science);
*Giam, S. Suleiman, Berba, Somalia,
(Soil Science);
*Goldsworthy, Brian, Heart's Content, Nfld.,
(Agricultural Economics);
Goodyear, S. Norman, Gander, Nfld.,
(Plant Science), Honours;
*Goulding, Otto, St. John's, Nfld., (General
Agriculture);
Govaerts, Georges, Clarenceville, P.Q.,
(General Agriculture), Honours;
Grothe, Christian, Outremont, P.Q., (Animal
Science), Honours;
Hidvegi, Sylvia, Montreal, P.Q., (Animal
Science), Honours;
Hodgson, Katrina, Dorval, P.Q., (Soil
Science), Honours;
*Holmes, Debra L., Antigonish, N.S.,
(General Agriculture), Honours;
Holmes, Philip, St. Stephen, N.B.,
(General Agriculture);
Hrushy, Okcana, Lachine, P.Q., (Soil
Science), Honours;
Johnson, G. Aidan, Conception Bay, Nfld.,
(General Agriculture);
Kadowaki, Douglas, Montreal, P.Q.,
(Soil Science), Honours;
*Leblanc, Michel, Dalhousie, N.B.,
(General Agriculture),
Honours;
Leroux, Luc, Les Cèdres, P.Q.,
(General Agriculture);
Leung, Wing Yiu, Montreal, P.Q.,
(General Agriculture);
Londorf, Pierre, Montreal, P.Q., (Animal
Science), Honours;
Lulham, Carole A., St. Bruno, P.Q.,
(Plant Science), Honours;
Mather, Diane, Montreal, P.Q., (Plant
Science), First Class Honours; University
Scholar;
*Migner, Pierre, St. Jovite, P.Q., (Plant
Science), Honours;
*Mingo, Valerie J., Truro, N.S., (Animal
Science);
Monsef-Saleh, Mohammad-Ebrahim,
Kermansham, Iran, (Agricultural Economics);
Morrison, Linda L., Beaconsfield, P.Q.,
(Animal Science), Honours;
*Murray, Michael P., Portugal Cove, Nfld.,
(Plant Science);
Murray, Stephen, Toronto, Ont., (Plant
Science);
Myner, Louise, St. Eugene, Ont.,
(General Agriculture), Honours; University
Scholar;
*Nemetz, Irwin J., Montreal, P.Q.,
(General Agriculture), Honours;
*O'Reilly, Edward, St. John's, Nfld.,
(Animal Science);
Oumet, Brian, E. E., Hemmingford, P.Q.,
(General Agriculture);
Parent, Hélène, Howick, P.Q., (General
Agriculture);
Payant, Sylvain, St. Chrysostome, P.Q.,
(General Agriculture), Honours;

Pelletier, Germain, Town of Mount Royal, P.Q., (General Agriculture), Honours;
 Préfontaine, Marc, Montreal, P.Q., (Animal Science), Honours;
 Prince, Denis, La Patrie, P.Q., (Plant Science), Honours;
 *Rashed, Eglal, Montreal, P.Q., (Plant Science), Honours;
 Robinson, Susan, Beaconsfield, P.Q., (Animal Science), Honours;
 Rogers, Grant, Beaconsfield, P.Q., (Animal Science), Honours;
 Russell, Barry K., Hillsborough, N.B., (General Agriculture), Honours;
 Saldan, Anna, St-Hugues, P.Q., (Plant Science);
 Schanz, Michael, Dollard des Ormeaux, P.Q., (General Agriculture), Honours;
 Sylvestre, Serge, Laval, P.Q., (Plant Science), Honours; Cutler Shield;
 Tanguay, Lucie I., Aylmer, P.Q., (General Agriculture);
 Themens, Mary-Ellen, Ville d'Anjou, P.Q., (Animal Science), Honours;
 Thomassin, Paul, Dollard des Ormeaux, P.Q., (General Agriculture), Honours;
 *Toogood, Mary C., Brierly Brook, N.S., (General Agriculture)
 Tremblay, Jacques, Laval, P.Q., (Plant Science), Honours;
 Trottier, Jean-Guy, Longueuil, P.Q., (General Agriculture), Honours;
 Van der Linden, Harry W., Heatherton, N.S., (General Agriculture), Honours;
 *Vickery, Dawna L., Antigonish, N.S., (General Agriculture), Honours;
 Virly, André, Ste. Anne de Bellevue, P.Q., (General Agriculture), First Class Honours;
 Whitney, Hugh G., Sherbrooke, P.Q., (Animal Science), First Class Honours;
 Winter, Julien P., Summerstown, Ont., (Plant Science), First Class Honours;
 University Scholar.

Biological Sciences Division

Candidates presented by Professor R. K. Stewart, Coordinator

Bracher, Grant A., Beaconsfield, P.Q., (Environmental Biology), Honours;
 University Scholar;
 *Carby, Derek, Montreal, P.Q., (Microbiology);
 David Marc, Baie d'Urfé, P.Q., (Environmental Biology), Honours; University Scholar;
 *Deadman, Jan, Mille Iles, P.Q., (Environmental Biology), Honours;
 Emmett, Kathryn A., Senneville, P.Q., (Environmental Biology), First Class Honours;
 Gillingham, Michael P., Pointe-Claire, P.Q., (Environmental Biology), First Class Honours; University Scholar;
 *Harvey, Daniel A., Ste. Anne de Bellevue, P.Q., (Environmental Biology);
 Langlois, Pierre, Senneville, P.Q., (Environmental Biology), Honours;
 *MacKay, A. Wayne, Fredericton, N.B., (Environmental Biology);
 *Yunton, Bakti Bin, Tutong, Brunei, (Botanical Sciences), Honours.
 *—In absentia

Renewable Resources Division

Candidates presented by Professor Micheline Chevrier

Bentley, Alison J., Rigaud, P.Q., (Wildlife Resources), First Class Honours;
 University Scholar;
 Edwardson, Gloria H., St. Lambert, P.Q., (Agricultural Land Planning and Development);
 *Evans, Robert C., Montreal, P.Q., (Wildlife Resources), Honours;
 Gardiner, David J., Montreal, P.Q., (Environmental Conservation), Honours;
 Approved by Senate October 5, 1977;
 Green, Diane, Pierrefonds, P.Q., (Environmental Conservation), Honours;
 Joncas, Laurie S., St. Leonard, P.Q., (Wildlife Resources);
 Jones, Tamara L., Kingston, Ont., (Wildlife Resources), First Class Honours;
 University Scholar;
 Klaus, Eleonora, Montreal, P.Q., (Wildlife Resources), Honours;
 Lalonde, Kim A., Chateauguay, P.Q., (Environmental Conservation), First Class Honours; University Scholar;
 *MacLeod, Helene F., Bras d'Or, N.S., (Wildlife Resources), Honours;
 *MacTaggart, Margaret, Montreal, P.Q., (Environmental Conservation), First Class Honours; University Scholar;
 Pellegrino, Anthony L., Lachine, P.Q., (Wildlife Resources);
 Picard, Robert H., Dorval, P.Q., (Environmental Conservation), Honours;
 *Stanley, Elsa S., Saint John, N.B., (Resource Economics);
 Watson, David S., Spencerville, Ont., (Agricultural Land Planning and Development);
 Weiss, Rachel, Montreal, P.Q., (Wildlife Resources), First Class Honours.
 *—In absentia

Degree of Bachelor of Science in Agricultural Engineering

Candidates presented by Professor E. McKyes, Chairman, Department of Agriculture Engineering

Arnold, Gilbert, St. Chrysostome, P.Q.
 Bégin, Joseph, Ste. Anne de Bellevue, P.Q., First Class Honours;
 Governor General's Medal; University Scholar;
 Bellefontaine, Daniel, Pierrefonds, P.Q.;
 Bolduc, Gilles, Drummondville, P.Q.;
 Cournoyer, Michel, St. Simon, P.Q., Honours;
 Couvillion, Carolyn, Pointe-Claire, P.Q., Honours;
 Gameda, Samuel, Nazareth, Ethiopia, Honours;
 *Lalande, Philip, North Bay, Ont.;
 Richard, Paul, St. Laurent, P.Q.
 *—In absentia

FACULTY OF GRADUATE STUDIES AND RESEARCH

Candidates presented by Professor Valerie M. Pasztor, Associate Dean (Records and Registration)

MASTER OF SCIENCE

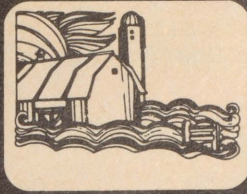
Bowman, J. Stuart, B.Sc. (Agr.), New Brunswick (Animal Science);
 de Passillé, Anne-Marie, B.Sc. (McGill), Quebec (Animal Science);
 Faghihi, S. Jamaledin, B.Sc. (Pahlavi), Iran (Plant Science);
 Havard, Kathryn-Ann Nucci, B.Sc. (F.Sc.) (McGill), Quebec (Chemistry and Physics);
 Havard, Peter L., B.Sc. (Agr. Eng.) (McGill), Quebec (Agricultural Engineering);
 Holder, Gordon D., B.Sc. (Univ. W.I.), Trinidad, W.I. (Renewable Resources);
 Kensett, Beverley C., B.Sc. (McGill), Quebec (Animal Science);
 *Lee, Colin, B.Sc. (Nat.Col.Agr.Eng.), Jamaica, W.I. (Agricultural Engineering);
 *Leonce, Leonard, B.Sc. (Agr. Eng.) (McGill), St. Lucia, W.I. (Agricultural Engineering);
 Milani, Parviz M., B.Sc. (Tabriz), Iran (Renewable Resources);
 Mohammed, Hakim, B.Sc. (Univ. W.I.), B.Sc. (Agr. Eng.) (McGill), Trinidad, W.I. (Agricultural Engineering);
 *Salawu, Olayiwola, B.Sc. (Ife), Nigeria (Plant Science);
 Samsonovitch, Morris, B.Sc. (McGill), Quebec (Animal Science);
 *Toohey, Karen M., B.Sc. (Concordia), Quebec (Entomology).
 *—In absentia

DOCTOR OF PHILOSOPHY

*Behan, Valerie M., B.Sc. (Dublin), M.Sc. (McGill), Ireland (Entomology).
"Diversity, distribution and feeding habits of North American arctic soil Acari."
 Elkies, M. Tarek, B.Sc. (Alexandria), M.Sc. (Alexandria), Egypt (Plant Science).
"Effects of ozone and sulphur dioxide singly and in combination on Petunia hybrida Vilm. cultivars of differing sensitivities."
 Foroud, Nader, B.Sc. (Tehran), M.Sc. (Tehran), M.Sc. (McGill), Iran (Agricultural Engineering).
"A Flood Hydrograph Simulation Model for Watersheds in Southern Québec."
 Khattat, Abdul Razzak, B.Sc. (Baghdad), M.Sc. (Beirut), Iraq (Entomology).
"The relation between population density and population movement of Lygus lineolaris (Palisot de Beauvois) (Hemiptera: Miridae), and crop damage."
 Ledoux-Péronnet, Marielle, B.Sc. (Laval), B.Sc. (Sherbrooke), M.Sc. (Montréal), Québec (Animal Science).
"Effect of Dietary Low Erucic Acid Rapeseed Oil, Hydrogenation, Mild Exercise and Physiological Stress on Cardiac Lesions in Male Rats,"

*—In absentia

The Family Farm



Published in the interests of the farmers of the province by the Quebec Department of Agriculture.



HEALTH IMPROVEMENT OF POULTRY

Aware of the need to improve the quality of Quebec poultry, the Veterinary Services of the Quebec Department of Agriculture are offering assistance to poultrymen concerned with the health of their flocks. This assistance will permit better control of poultry diseases such as pullorum-typhoid and salmonellosis.

Poultrymen who satisfy the requirements of the Department may now benefit by a subsidy of \$.08 per rapid blood test and \$.10 per blood sample.

The rapid detection test in the case of pullorum-typhoid, a serious contagious poultry disease is done on the poultry farm. The Department's laboratories test submitted samples of culled chicks and poults, unhatched eggs or other material which may contribute to a precise diagnosis. For each poultry farm, the laboratories undertake to determine

the blood type of 150 chicks and poults which are a day old.

Confirmation of a contagious disease by a provincial laboratory may result in disqualification or, as the case may be, in a hatchery losing its certification. Hatcheries must meet government health standards. In addition, they must procure their eggs, whether by purchase or exchange, only from poultry farms or hatcheries with equivalent sanitary conditions. Finally, it should be noted that the Department of Agriculture reserves the right to take any measure it deems necessary for the efficient application of this health program.

Further information on the health improvement for poultry may be obtained at any local agricultural information office or the Department's Veterinary Services at 200-A, chemin Sainte-Foy (9th floor), Quebec, G1R 4X6, telephone (418) 643-2476.

their local agricultural information office. They must also agree to comply with certain conditions concerning the physical installation and management of their flock, and follow all instructions from the veterinarian responsible for the application of the program.

Further information on the health improvement program for sheep may be obtained from the local agricultural information offices or the Department's Veterinary Services, 200-A, chemin Sainte-Foy (9th floor), Quebec, G1R 4X6.

NEW LIMESTONE PROGRAM

The 1978 limestone program contains major changes which ensure farm producers an effective quality product and a more suitable transport service. Henceforth, once the pH of his soil has been determined, the producer is fully authorized to secure limestone from suppliers in his region and to transport it or have it delivered by a trucker of his choice.

Full cooperation from the three parties involved, i.e., the farmer, trucker, and quarry owner, should guarantee a successful program.

The Farmer

Once he has obtained the results of the pH analysis of his soil, the farmer, with the help of his local agronomist, determines the required amount of limestone. He then places his order with a trucker of his choice whose name appears on the list posted in the local office.

Upon delivery, the farmer must check to see that he has received the amount ordered and that the spreading is done in the right areas.

HEALTH IMPROVEMENT OF SHEEP

In order to encourage breeders of purebred sheep to increase their participation in the programs for performance testing on the farm and at the station, the Quebec Department of Agriculture is offering an assistance program aimed at improving the health of sheep. Administered by the Department's Veterinary Services, this program enables eligible farmers to benefit by technical help from government veterinarians.

Under this assistance program, sheepmen receive a slaughter grant of up to \$50 for a crossbred, and \$125 for a purebred sheep provided

that the loss of the animal is due to a contagious or hereditary disease. It should also be noted that only those sheep which died of the same disease or which were slaughtered upon the written authorization of a Department veterinarian qualify for the financial assistance provided under the program. Sheepmen, however, are required to present certificates of slaughter issued by the abattoirs involved. They must also include the registration certificates for their purebred sheep.

All producers wishing to participate in the health improvement program for sheep must submit application to

Following this, the producer has only to fill out a claim form. To qualify for the provincial grant he must enclose with his application the bill of sale and the bill of lading from the trucker.

This year, the government grant for the purchase of limestone continues to cover its transport, but will be paid directly to the producer rather than to the transporter. It varies according to the distance between the parish in which the producer's farm is located and the nearest quarry. For example, a farmer from Levis County, who has 50 tonnes of limestone transported and spread, will receive the sum of \$355.10 i.e., \$7.10 per tonne.

The Trucker

In the future, the Department will no longer issue a permit to truckers who wish to transport limestone. Its

role is now limited to inspecting the trucker's equipment and to drawing up a list in each agricultural region of the truckers authorized to transport and spread limestone.

A trucker is placed on the list only after he has provided proof that his truck is equipped with a V-shaped steel box and a limestone spreader. Before taking an order, the trucker must also make sure that he can have his loads weighed at a quarry or public scales.

The cost of transporting and spreading the limestone (the latter, a sometimes difficult operation, especially on wet soils) must be settled between the trucker and the individual farmer.

Quarries

Limestone quarries must meet very definite conditions. Their material

must have an agricultural value index of 62 per cent. They must also be equipped or have access to computerized scales that make it possible to weigh the trucks before and after loading.

The quality of limestone sold by the 15 quarries in Quebec is inspected several times a year. Note that the Department's new agricultural program groups the limestone supply centres under quarries and subjects them to the same regulations.

Beneficial Program

The use of agricultural lime is considered essential for maintaining and improving the productivity of most arable soils. Moreover, changes in the new limestone program will enable farmers from now on to negotiate with their suppliers in order to obtain the best possible prices and services.

CONTRIBUTORY ANIMAL HEALTH INSURANCE (CAHI) A GOOD SAFEGUARD FOR PRODUCERS

In order to ensure greater health protection for all Quebec farm animals, whatever the farmer's place of residence, the Quebec Department of Agriculture offers its contributory Animal Insurance Program (CAHI). The main advantage of this program is to halve the cost to farmers of the services of a veterinarian on the following conditions:

The aims of the program

Thanks to a direct contribution from the Quebec Department of Agriculture, the program ensures farmers readier access to veterinary services. It also makes possible uniform rates for veterinary services throughout the province and an increase in their quality while encouraging specialization in the different clinical disciplines. Also owing to the Veterinary Medicaments

Distribution Centre administered by the Quebec government, farm producers benefit by much lower prices for the purchase of medicaments recommended by a veterinarian participating in the program. In fact, more rational use of costly veterinary medicaments, which are often administered needlessly and sometimes even with harmful results, can only be beneficial.

Conditions of eligibility

All raisers of cattle, pigs, goats, sheep, rabbits, fur animals, poultry, and horses intended for farm work (including mares used for producing estrogens) are eligible for the program.

On the other hand, all producers who are already participating as owners or contracting parties in an

integrated enterprise, and federal and provincial government and university research stations and hospital farms are excluded.

Reciprocal responsibilities of the veterinarians, the farm producer, and the Quebec Department of Agriculture

The veterinarian must respect the CAHI regulations, especially in restricting his fees and distributing the prescribed medicaments at the prices set under the program.

The farm producer must have recourse to the services of a veterinarian who is a member of the Association of Veterinary Practitioners of Quebec, provide the veterinarian with all the information required to make out the bill, and sign the said bill. He must also pay his share of the fees and avoid abuses which are always possible in

view of the reduced cost of services dispensed under the program.

In addition to the veterinarian's travelling expenses, the Quebec Department of Agriculture undertakes to defray at least half of the cost of the veterinary services. A set amount is also granted to veterinarians willing to settle in places designated by the Quebec Department of Agriculture.

THE IMPORTANCE OF THE BOAR TO THE HERD

In 1978 it seems that the Quebec hog industry will once more show very marked progress. All the new buildings erected this spring are obvious proof of this. However, in these circumstances, one thing is certain: in the case of hog raising or any other agricultural industry, only very productive enterprises will have their place in the sun.

Judicious choice of replacement animals helps increase productivity in a herd. A new boar must therefore be selected very carefully as it contributes 50 per cent of the genes of each of 400 to 500 market hogs born and sold in one year, thanks to him. For breeders concerned with improving the performance of their slaughter animals, the need to select their boars well is of prime importance.

It must also be pointed out that only good herd management, perfectly suited to the needs of new breeding stocks, will result in the best possible yields. The following recommendations are to help farmers solve the main problems they will meet when buying a boar.

1. A young boar must not be used for breeding before seven or even eight months of age. Also, even at this age, the number of matings must be limited to about three or

four per week if he is to reach normal sexual development. It is only when a boar is 11 or 12 months of age that he can be used about a dozen times a week.

2. A young boar must never be let loose amongst a lot of females. The resulting traumatism could affect him irremediably.

3. It is important never to overuse a boar. In fact, a male should generally be limited to an average of 20 to 25 females. However, if the breeder has recourse to artificial insemination, this ratio can be increased considerably.

4. It is always bad to overfeed breeding animals. Indeed, excessive flesh too often results in the culling of many animals which have sometimes been purchased at a high price.

Before buying a new hog, it must be noted that it is essential to make sure that his daily gain and back-fat thickness have been well evaluated. Also, his gain-probe index must be over 100.

Therefore, all hog raisers who wish to get replacement animals of high quality are invited to attend the monthly sales held at the Lennoxville Station.

ASSISTANCE PROGRAM FOR FINISHING BEEF CATTLE

Aware of the massive imports of beef into Quebec, the Department of Agriculture has set up a program of "assistance for finishing beef cattle", which should relieve our state of dependence.

For this purpose, the Quebec Department of Agriculture provides for a grant of 50 per cent of the cost of construction or renovation of the buildings, with a limit of \$20,000 per enterprise. However, a farmer interested in this project must meet certain requirements: he must be recognized as a farm producer within the meaning of the Farm Producers Act, be a specialized operator in finishing beef cattle and, lastly, operate a farm located in the best areas of the fodder corn zone.

Once these conditions have been met, the producer will only have to register with the nearest Agricultural Information Office and see to setting up a feedlot with a capacity of at

least 300 head at a time. He must use fodder corn as basic feed, grow on his farm 50 per cent of the Total Digestible Nutrients (TDN) required for the feeding of steers and provide the supervisor with the accounting data necessary for the study of the profitability of his enterprise. He must also agree to have his enterprise participate in the extension planned by the regional office and have the site of his establishment approved by the Quebec Environment Protection Branch.

It should be noted that final approval of projects rests with the regional committee, under the chairmanship of a representative of the Livestock Productions Service.

For further information, you may contact your local Agricultural Information Office.

QWI

Board Meeting Federated Womens' Institutes of Canada, June '78

The Federated Womens' Institutes of Canada met June 19-22 at Carleton University, Ottawa, for their annual Board meeting, chaired by the President, Mrs. Martha Bielish of Warspite, Alberta.

As a rural organization, concerned with home and family, the FWIC will contact the Minister of Health and Welfare, Monique Bégin, urging the Government of Canada to appoint a National Commission to co-ordinate the International Year of the Child (1979) activities. They recommend that representatives from the Canadian Committee for the I.Y.C. be appointed to the Commission because of the important work they have already done in preparing for I.Y.C.

They further recommended that the Commission's terms of reference ensure that on-going programs be promoted which will provide for the social and economic well-being of all children. Because of their particular concern for rural children, they also urge that a representative from FWIC be appointed to the Commission.

In conjunction with I.Y.C., provincial WIs will make a study of all provincial laws pertaining to children and take part in a safety competition. This project is to be geared to one aspect of child safety.

An annual scholarship — the Hazel Styles Scholarship — will be awarded to an Institute member who wishes to further or up-grade her education or skills in areas related to cultural activities, to benefit both self and community.

Resolutions passed at the Board meeting urge that farmers be allow-

ed to deduct wages paid to wives from taxable income in the same way wages paid to children may now be deducted, and that FWIC urge the Federal Government to take immediate steps to include homemakers under the provisions of the Canada Pension Plan allowing them to make contributions and to receive benefits.

The theme of the triennial conference, which will be held at the University of Saskatchewan in Saskatoon from June 24 to 28, 1979, is "Perspectives and Priorities". This conference will mark the 60th Anniversary of the year that Women's Institutes in Canada formed a federal organization.

Plans for the next year include further work in Northern Canada. It is hoped conferences will be held at Inuvik and in the Great Slave area, in conjunction with the Department of Continuing Education of the NWT. The Newfoundland and Labrador WI will be working with communities in Labrador.

The FWIC "Pioneer Women" project has been regretfully cancelled, due to unforeseen circumstances. The rules for the "Safety Contest" will soon be available. More will be heard on this at the Provincial Board meeting.

Mrs. Anne Robertson,
Public Relations, FWIC

Speakers Highlight County Convention

Excellent speakers and a film on CanSave were among the highlights of **Argenteuil County's** Annual Convention held in late April in Brownsburg. Over 100 county members went home with a wealth of information on projects and organizations at both the local and international level.

Over 300 Argenteuil residents, most of them senior citizens, are benefiting from a pilot project set up by the Quebec Social Affairs Department. The program, aimed at helping people to go on living in their own homes, is called "Service d'Aide à Domicile" (S.A.D.) or "Home Care Service," was described in detail by two of its senior members, registered nurses Lynn Campbell and Louise Filion. The service employs two full-time and one part-time nurse, four full-time homemakers and two part-time, as well as a secretary. A physiotherapist and a social worker are available for consultation and a doctor and a director of nursing give their assistance on a voluntary basis.

What this team is attempting to do is to help people to continue on in their own homes as long as possible. "Our role is preventive more than curative," one nurse pointed out. With an extensive list of patients, each nurse's visit is thorough but must of necessity be brief. The nurses are on the road almost every day and visit each patient about once a month, unless otherwise necessary. The homemakers may spend from three hours to a full day with individual patients. They have special training and can give baths, help with exercises, do some housework and food preparation. A large role that they play is companionship, as well as providing an alert eye for health or other problems. The above is but a brief outline of the speakers' most informative talks, and we are sure that this worth-while program will be watched with interest.

Other speakers included Rodger Lyster who, as president of the 1978 Lachute Fair, congratulated the members on the work they do for

Senior Argenteuil County WI members are front row, left to right: Mrs. I. Low, Brownsburg, Mrs. N. Morrison, Frontier member for over 30 years, Mrs. G. Seary, Brownsburg Charter Member for 54 years. Second row, left to right: Mrs. G. Deacon, Lachute Charter Member for 46 years, Mrs. R. Murdoch, 50 years as a member, now with Jerusalem-Bethany, Mrs. A. Smith, who started with Bethany over 60 years ago now with Pioneer, and Miss H. Smith, a Charter Member of Upper Lachute-East End for 58 years.

the fair each year. A social worker with two local school boards, Mrs. Frederica Hartley, told of her work with teachers and with students who have emotional or disciplinary problems. Mrs. Ethel McGibbon spoke to the County Convention on behalf of the Argenteuil Historical Society. She thanked WI members for their assistance with the Carillon Museum and for donations to the Society. In talking about a summer project at the Museum, Mrs. McGibbon said, "Anything which illustrates the history of our county should be preserved for future generations and people should also be careful to protect old documents." This advice applies equally well to other regions. Bobby Rodger, 4-H Club leader, told members that Lachute 4-H currently has 52 members in the 10-20 age group. Some show calves in competitions, others garden produce. He pointed out that finances are always a problem — the cost of the annual banquet, shipping calves to out-of-town rallies, etc. — but members raise a large part of the money needed themselves.

Luncheon, business, including the election of officers, and the film on CanSave, along with the speakers, made for a most successful county convention.

Member Honoured

At the close of the June meeting of **Belvidere** branch held at the home of Mrs. Phyllis Hazard with Miss Eva Beaton as co-hostess, our loved, respected, and faithful member Mrs. Charles (Ethel) Drummond, who has been a member of our branch for over 55 years, was honoured.

President Miss Margaret Kinhead pinned a corsage on Ethel, which was made by Mrs. Mickey Povey. She was then presented with an Abbie Pritchard throw by a long-time friend and fellow member, Mrs. Charles Pitman.

The recipient was touched and pleased with this gift, thanking all for their thoughtfulness. Later in the evening this little lady entered the



Grace Christian Home in Huntingville where she will make her new home and be cared for.

Dear WI Members

These perfect June days are symbolic of the happy events that belong to this month. We think of graduations, weddings, and anniversaries. A correspondent for a local newspaper called graduation "an affair of the heart." Well, so are weddings and anniversaries, and in the background we picture trellised roses, bouquets of yellow daisies and baby's breath, and dainty corsages shyly worn by graduating teen-agers. We'll be gathering memories through the summer to August when this will be in print. Then our Annual Convention just managed to be a part of June, too. Generally conveners wrote that the delegates had taken back interesting reports to their branches.

The publicity convener for **Matagami** writes, "On Tuesday, June 6, our Institute members held their annual meeting at the Matagami Hotel which was well attended and enjoyed by all. Mrs. Comba spoke on Convention and told the members that they should attend at least one Convention." The same branch reported a busy weekend at the Lion's Fair where

they run the snack bar every year. It was a busy time, as the snack bar was open Friday evening, Saturday and Sunday afternoons and evenings — 2,300 glasses of pop, 72 dozen hot dogs, and 450 hamburgers were sold. Local teen-agers helped, so it could be called a family undertaking.

At the **Valcartier** meeting a large box of knitted articles for CanSave was packed. The articles included sweaters, socks, mittens, caps, and scarves; five remnants were also added.

Mrs. Thorburn from Argenteuil County reports the highlights. **Dalesville-Louisa** had Constable Fillion of the police force show a film entitled "What to do in case you are attacked by a man in the street." This was a follow-up to his talk given at a previous meeting. He also informed the group of the new campaign in the area of working together to prevent crime. **Arundel** members were taking part in the Canada Day Celebrations. The Adult School Library was discussed. Some new books and crafts are being ordered and it is hoped that adults will use them. It is open Monday, Tuesday, and Wednesday mornings and WI members will be there to assist and to catalogue the new books. **Upper**



Earlier this year five members of the Dartmouth River WI went to the home of Mrs. Irene Roberts and presented her with an Abbie Pritchard Throw.



Ascot members celebrated their 60th Anniversary when 55 members, husbands, and friends gathered for a banquet. Head table guests, left to right: Mrs. D. McElrea, Past President, Mrs. E. Marlin, President, Mrs. F. Ingham, Secretary, Mrs. D. Annesley, 1st Vice-President, Mrs. S. Parker, QWI 1st Vice-President, Mrs. D. Cullin, then County President, and Mrs. A. Hatcher, Treasurer.

Lachute East End members met at Mr. and Mrs. Brown's candle-making shop and were shown how candles are made from raw parowax to the finished product. The candles produced here are known world-wide. At their June meeting the guest speaker, Mrs. Allen Hammond, spoke on the lack of decorum in the family circle, especially at meal time when some of the family members, particularly the young folk, watch television. At the **Jerusalem-Bethany** meeting Mel Smith gave

an interesting account of his trip to the British Isles which had been arranged by the Ayrshire Club of Scotland. Some 200 Canadians and a few people from the United States, Australia, and Africa had also taken this tour. **Lachute** held their June meeting in the Elementary School and the members were privileged to view some of the pupils' handicrafts. Mrs. Ethel McGibbon reported on the Convention. She mentioned that she had visited the new Macdonald-Stewart Building where the WI office

is located and hoped that all branches had contributed to the building fund. The Citizenship Convener of **Brownsburg** reported having sent a large carton of knitted articles and handicrafts to CanSave and the Welfare and Health Convener read a very interesting item about better medical care of the aged in the future. According to Dr. Colin Smith of the University of Saskatchewan in Saskatoon, the mental ills of later life are often related to physical ills and are highly treatable. "Senility should be banned from the doctor's vocabulary."

The Everyday Branch of the Women's Institute in Vankleek Hill, Ontario, entertained **Pioneer** ladies. **Frontier** ladies operated a tea and cookie booth at the Lachute Fair and were planning a family picnic at Carillon Park in July. At the **Aubrey-Riverfield** meeting it was reported that flowers had been planted at the Cenotaph and that a new WI scrapbook was available for \$1.50. Mrs. Willa Hooker, Ormstown, told of the operation of the local branch of the Mentally Retarded Association.

Huntingdon heard a report of the work done at Little Green Library and plans were made to hold a fashion show at the Huntingdon Fair. **Hemmingford** members congratulated Mrs. Edwin Keddy on completing her Assistant Nurse's course at C.V.R. Mrs. Keddy won special prize for surgical nursing and was class valedictorian. The branch gave a donation to Daily Hello monthly phone bill and 80 bags of seeds were distributed among elementary school children. At the **Howick** meeting letters were read from two WI pen pals: one from Houston, B.C. which is a farming district with an expanding saw mill industry, and the second from Port Dover, Ontario, a fishing village where the main industry is growing and selling "Iveys" roses. Both the ladies who wrote are active WI members and both expressed the hope that there would always be a Quebec within Canada.

It was good to receive news from **Abbotsford** branch. The citizenship convener Mrs. Carlyle asked the members to give a short resumé of the history of each home. Mrs. Boyd

Honey read a paper which had been presented to this WI by Miss Evelyn Honey in 1931 in which she gave the very early history of many of the area homes. Handbags were collected, preparations are being made for a garage sale, and at the tea hour one of the members, Miss Muriel Marshall, was honoured on her 90th birthday. This seems like an interesting and enjoyable meeting.

Clarendon had as a guest speaker Mrs. Ellison of Ellison Greenhouses whose topic was plant diseases and pests and their control. At **Granby West** members are planning to raise enough money to continue visiting the nursing home, Orchard Manor, and taking a gift to each person there. **Granby Hill's** education convener said that the District of Bedford was planning a class for children confined to wheel chairs and also stressed the importance of making reading a joy in Grade 1. She said that parents must cooperate with teachers in this. Two picnics were planned for this area: the annual neighbourhood picnic on July 1 at Mrs. A. Coupland's cottage and the county picnic at Mrs. Herbert Irwin's cottage when Milby WI will be guests. **Waterloo-Warden** are pleased to say that three prizes in J.&P. Coats Competition and one in the QWI were won by ladies in this branch.

There are interesting reports from the seven branches in Richmond County. To start, I must say that these branches supported very generously the Sherbrooke Hospital, the Lesotho Fund, and the Wales Home. **Cleveland** held the June meeting at the Wales Home with several residents present. Members decided to purchase a geriatric chair for the Home. **Richmond Hill** members worked on the county project of a hooked rug all made of material on hand, and the agriculture convener gave out seeds for a contest to be held in the fall. A quilt was to be put on display and hopefully sold, and \$20 was sent to the Macdonald Building Campaign.

Spooner Pond members held their June meeting in the Wales Home in the apartment of a resident member.

An auction sale of plants and slips was held and a bouquet of peonies and roses was presented to the hostess — a thoughtful gesture! Another quilt is ready for sale and books were donated to the Richmond Regional School at **Shipton's** meeting. For **Richmond Young Women**, I'll quote from Mrs. Sutherland's letter: "A senior citizen and a WI member, Mrs. J. Kerr sent our branch a donation for being so thoughtful and remembering her on different occasions. Mrs. Kerr was a tower of strength to Richmond Young Women's Institute in our early years and encouraged us to continue when we faltered along the way."

Gore has a pen pal in Alberta — the latter seems to be a popular province. A donation of Esmond blankets had been received and were for sale. At **Denison Mills** Mrs. C. Carson gave an interesting talk on her trip to South Carolina. She also showed photographs.

The agriculture convener of **Brompton Road** stated that 332 packages of seeds had been given out to 80 children participating in the County School Fair. A morning's instruction in Swedish weaving was given at **Lennoxville** and work was done on an afghan for the Tweedsmuir Competition. **Milby** donated to the School Fair, to the Sherbrooke Hospital, toward the new drapes for the WI room, and they will buy the prize for the drawing at the next county meeting.

Different branches in Compton County helped the Sherbrooke Hospital, the Pope Memorial School Library, the Brownies, Student Exchange to Newfoundland, the landrover, public speaking in the local school, the Dixville Home, and packed handbags. **Bury** joined with St. Paul's Guild to honour Mrs. Kenneth Tarrant who is leaving to take up residence in New Brunswick. She was presented with a Life Membership Pin and certificate for her many years of service as guidance counsellor for the local Junior WI. Mrs. Helen Groom presented Mrs. Tarrant, Mrs. Marjorie Dougherty, and Mrs. Lillian Olson with Abbie Pritchard Throws. **Canterbury** had a very successful food, handicraft,

and social tea sale to raise money. Mrs. Lowry wrote: "all have a happy feeling to know that we can work in unity and in service for Home and Country." **Sawyerville** entertained the Executive of Compton County. Mrs. Groom spoke on "Let's Preserve Family Life." At East Clifton Agronome D. MacMillan spoke on agricultural policies of 1978.

Iverness sent 10 articles for entry in the handicraft competitions at the Annual Convention. Kinnear's Mills ladies held an auction with the proceeds going to Pennies for Friendship and both branches donated toward prizes at St. Patrick's Elementary School in Thetford Mines.

Mrs. Clark, publicity convener for Dunham, read excerpts from the Sherbrooke Record "Headlines of the Past", an article of particular interest was taken from the Charlottetown Clarion of 1864 which stated that Confederation talks were being held and some folks were even against it then.

Here are some roll calls submitted: **Brownsburg**: How do you rate yourself as a pen pal on a scale of 1 to 10? **Kinnear's Mills**: Name the best bargain you have ever had. Answers varied from articles of clothing, materials, and food to cattle and farm machinery. **Spooner Pond**: Why I am proud to be a Canadian. Answers were: we have many freedoms here not found in other countries; we have not known warfare on our soil in our generation; we can raise practically everything we need in our own country. **Gore**: Each member brought a potted plant and gave it to her right-hand neighbour. **Iverness**: Tell an incident that happened to your father when you were young.

These are some of the mottoes for this month — **Brompton Road**: It is easy to be an angel when nobody ruffles your feathers. **Gore**: If you can't have the best, make the best of what you have, and from **For-dyce**: The measure of life, after all, is not its duration, but its donation.

Gladys C. Nugent,
QWI Publicity.



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Quebec Provincial Plowmen's Association

a farmer's association

- to promote good plowing and improved soil management
- to provide in-field farm machinery demonstrations
- to promote improved agricultural techniques and research in Quebec
- to cooperate with government, agribusiness and universities to further the above objectives.

Provincial Plowing Match and Farm Machinery Demonstrations
Provincial Agricultural Research Station, Deschambault
September 6, 7, 8 & 9, 1978

for further information contact:

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